

## ABSTRACT OF THE DISCLOSURE

- A substrate fixture has been designed, which significantly improves production yield of thin film based demultiplexer filters for use in Dense Wavelength Division
- 5 Multiplexer (DWDM) systems. The fixture is comprised of a small area disk capable of rotational speeds greater than 1000 rpm with a dedicated concentric thin film quartz crystal thickness monitor and "clam shell" type shutter. The fixture is intended to be used in a vacuum deposition system, designed to perform optical coatings. The high-speed rotation and location of the fixture with respect to the deposition source guarantees
- 10 coating thickness uniformity on substrates attached to the disk. The concentric quartz crystal thickness monitor (QCM) calibrated to the geometry or the deposition environment guarantees accurate thickness determination over the area of the disk to within 0.01 percent. The deposition system, designed to produce multilayer filters, for use as demultiplexers in DWDM systems, would utilize a dense array of fixtures of the
- 15 type described herein for maximum production yield.

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